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MEMORANDUM FOR Maureen Lynch
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Subject: Accuracy and Coverage Evaluation Survey: E-Sample Identification Approval and Summary of Results

I. INTRODUCTION

The Sample Design Team approves the results of the Census 2000 Accuracy and Coverage Evaluation (A.C.E.) E-sample identification operation for release to persons who need this information to carry out A.C.E. operations. The Processing Support and Coverage Measurement Systems staff has included the information reflecting the E-sample identification in the sample design file and the Hundred Percent Census Unedited File (HCUF) extract. We have previously approved the E-sample identification because this was a continuous operation. The intent of this document is to formalize and distribute the final results. Note that an identified E-sample housing unit may not necessarily contain E-sample people because the housing unit may not contain data-defined people. The E sample contains only data-defined people.

The Census Bureau will use the A.C.E. survey as a quality check for Census 2000 by comparing two different samples, the Population or P sample, and the Enumeration or E sample. We previously selected the P sample by:

- creating an independent list of addresses developed in a sample of block clusters selected under the Integrated Coverage Measurement 750,000 housing unit design (results in reference 1)
- subsampling medium and large block clusters from the listing sample (results in reference 2)
- subsampling small block clusters from the listing sample (results in reference 3)
- subsampling housing units in large block clusters (results in reference 4)

To identify the E sample, we map the A.C.E. geography onto the HCUF, the census list of housing units, and create an E sample that overlaps the P sample. The clusters in the E sample are the same clusters previously selected for the P sample, but the housing units in the samples are not necessarily the same. The A.C.E. initial housing unit matching involved comparing the A.C.E. housing unit list to the January, 2000 census list, the most current list at the time of matching. When identifying the E sample from the HCUF, changes in the census housing unit list have occurred, so the HCUF does not perfectly correspond to the earlier census list. Corresponding HCUF housing units were on the census list used for matching, while non-corresponding HCUF housing units were not. All HCUF housing units, regardless of their correspondence status, have a non-zero probability of selection for the E sample to ensure the statistical validity of the A.C.E. estimates.

In clusters with fewer than 80 HCUF housing units or in the American Indian reservation (AIR) sampling stratum, all HCUF housing units are in the E sample whether they are corresponding or non-corresponding. In non-AIR clusters with 80 or more HCUF housing units, we use the results of A.C.E. housing unit subsampling to identify the E sample. The segments created for housing unit subsampling are mapped onto the HCUF using the correspondence between A.C.E. and census housing units established in initial housing unit matching. A non-corresponding HCUF housing unit goes into the same segment as its nearest previous corresponding neighbor on the HCUF. The HCUF housing units in segments selected for the P sample are then also in the E sample. If the E-sample segment has fewer than 80 non-corresponding HCUF units, then all of them are in the E sample. Otherwise we systematically subsample the non-corresponding units in the E-sample segment, with the selected units included in the E sample. This step is called E-sample subsampling.

The E-sample identification methodology can lead to a cluster having two different E-sample weights. In clusters where E-sample subsampling occurred, the corresponding E-sample housing units have the same weight as the P-sample housing units. But the non-corresponding E-sample housing units, which were selected in the E-sample subsampling step, have a larger weight due to the additional subsampling.

Section II of this memorandum and its attachments contain summary statistics of the operation. Please direct any questions regarding E-sample identification to Ryan Cromar (301-457-1636), James Farber (301-457-4282), or Deborah Fenstermaker (301-457-4195) of the Decennial Statistical Studies Division.

II. RESULTS

For the 50 states and the District of Columbia, 11,303 block clusters with 311,029 housing units are in the E sample after E-sample identification, plus 499 clusters and 14,113 housing units in Puerto Rico. The E-sample housing unit totals are larger than the P-sample totals, which are 300,913 for the United States and 13,736 for Puerto Rico.[1] Table 1 in Attachment 1 summarizes the results of the P and E sample for each state and the nation.

Table 2 compares the weighted and unweighted number of P- and E-sample housing units in each state. The weights generally account for differences between the unweighted P- and E-sample size and make the weighted housing unit differences small. For example, the unweighted P sample in Oregon is about 17 percent lower than the E sample. But the higher P-sample weight brings the weighted P sample to within 1.5 percent of the E sample. Nationally, the weighted number of P-sample housing units is less than one percent larger than the E sample.

Tables 1 and 2 show the nation and most states have E-sample housing unit totals that are greater than the P-sample. Tables 3A and 3B summarize the situations where this occurs. As shown in Table 3A, the majority of the difference between the two samples occurs in the 260 clusters that had fewer than 80 A.C.E. housing units but more than 80 HCUF housing units. A cluster in this group did not undergo A.C.E. housing unit subsampling, so the entire cluster was in the P sample and therefore also in the E sample. While some of these clusters required E-sample subsampling due to a large number of non-corresponding housing units, most did not and had all of their corresponding and non-corresponding housing units identified for the E sample. For example, a cluster in this group could have 50 A.C.E. and 120 HCUF housing units. Even if all 70 of the extra housing units are non-corresponding, this cluster would not need E-sample subsampling and all 120 housing units would be in the E sample. Aggregating such changes in the census housing unit stock over the clusters in this group leads to the larger E sample. Similar situations also occur in some of the other groups in Table 3. Table 3B combines the 0 housing unit and 1 to 79 housing unit groups to provide consistency with Table 4, which decomposes the cases shown in Table 3B to the state level.

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[1] We use the term "P sample" to denote the housing units designated for A.C.E. interviewing after large block cluster subsampling. The results of interviewing will determine the actual P-sample people.

Figure 1 shows the distribution of the number of E-sample housing units in each cluster. The 1,290 clusters in the first bar have zero E-sample housing units. Note that Table 1 shows 1,240 clusters with zero HCUF housing units. The cause of this discrepancy is random sampling variation. Fifty clusters have 80 or more HCUF housing units, but none of those housing units were in the segment selected for the P sample during A.C.E. housing unit subsampling. Therefore the E sample in these clusters also has no housing units. This outcome is acceptable and statistically valid.

We summarize the P- and E-sample weights with tables and figures in Attachment 2. Figure 2 shows the distribution of the P-sample cluster weights and the weighted mean E-sample cluster weights. Computing a weighted mean E-sample weight is necessary because clusters where E-sample subsampling occurred have two different E-sample weights. We compute the weighted mean E-sample cluster weight by:

- multiplying each of the E-sample weights by the proportion of housing units in the cluster that have that weight
- adding the proportional weights to get the weighted mean E-sample weight.

For instance, if a cluster had 60 housing units with an E-sample weight of 500 and 40 housing units with an E-sample weight of 1000, then the weighted mean E-sample cluster weight is $(60/100) \times 500 + (40/100) \times 1000 = 700$.

As shown in Figure 2, about 94 percent of the clusters have E- and P-sample weights less than 700. In general, the weights over 700 are from small block clusters, which usually contain few housing units. A few non-small clusters have weighted mean E-sample weights over 1000 due to E-sample subsampling. As shown in Figure 3, which compares the distribution of E- and P-sample housing unit weights, about 99 percent of the P- and E-sample housing units have weights that are less than 700.

Figure 4 shows the distribution of E-sample cluster and housing unit weight-1. An E-sample housing unit received weight-1 if the housing unit corresponded to an A.C.E. housing unit. Figure 4 shows that:

- more than 94 percent of the E-sample housing units have E-sample weight-1
- about 99 percent of these housing units have an E-sample weight-1 less than 700
- about 94 percent of clusters with E-sample weight-1 have E-sample weight-1 less than 700

Figure 5 shows the distribution of E-sample cluster and housing unit weight-2, which was assigned to non-corresponding E-sample housing units. Figure 5 shows that:

- six percent of the E-sample housing units have E-sample housing weight-2
- about 93 percent of these housing units have E-sample weight-2 less than 700
- three clusters and about 200 housing units have E-sample weight-2 above 1,800

The three clusters and 200 housing units with the largest E-sample weight-2 values clearly illustrate the effect of E-sample subsampling. The P-sample weights in these clusters were already relatively large, and then the E-sample non-corresponding housing units received additional weight to represent the HCUF housing units not selected in E-sample subsampling. Thus the E-sample weight-2 grows large.

The remaining figures in the attachments are boxplots that present the following statistics. The median, or the 50th percentile, is the white horizontal line inside each box. This means 50 percent of the clusters have weights below the median, and 50 percent have weights above. The 25th and 75th percentiles are the lower and upper borders, respectively, of the shaded boxes. The upper and lower whiskers represent either the most extreme values of the distribution or the median +/- 1.5 times the interquartile range (IQR), whichever lies closer to the median. The IQR is the difference between the 75th and 25th percentiles. Under a normal distribution, about 99.3 percent of the cluster weights would fall between the whiskers. Lines beyond the whiskers represent potential outlier weights.

Figure 6 has boxplots showing the distribution of E- and P-sample weights overall and by sampling stratum. We determined the sampling stratum during stratification in the first phase of A.C.E. sampling using early estimates of housing unit counts. The four sampling strata are small clusters (0-2 housing units), medium clusters (3-79 housing units), large clusters (80 or more housing units), and AIR clusters. The figure shows that:

- P- and E-sample weight distributions within each sampling stratum are similar with the exception of the few extreme E-sample cluster weights
- weights from small block clusters are generally higher than weights from medium and large clusters, which is by design
- there is relatively equal weighting between medium and large block clusters in both the P and E samples

Figures 7 and 8 show distributions of the weighted mean E-sample and P-sample cluster weights by state, respectively. The distributions of weights in the P and E samples within each state are similar. Like the P-sample weights, small population states, such as Alaska, Delaware, Hawaii, Rhode Island, South Dakota, and Vermont, have smaller E-sample weights than other states. This is because the smaller states have larger samples than they would have received under sampling with probability proportional to size. Two clusters with weighted mean E-sample cluster weights greater than 1500 occurred in California.

Figure 9 presents the P- and E-sample cluster weights for the five major reduction strata: minority, low inconsistent, high inconsistent, consistent, and medium stratum jumpers. The distribution of the P- and E-sample cluster weights are similar within each A.C.E. reduction stratum.

One goal for the P and E samples was to reduce weights for clusters that have high concentrations of traditionally undercounted population groups and for clusters that may be more likely to have coverage errors. As shown in Figure 9, the weights for minority clusters for both the P and E samples are generally lower than the consistent stratum weights, as are the weights for the two inconsistent reduction strata, where coverage problems might occur. Similarly, the weights for medium stratum jumper clusters are comparatively low for the P and E samples. All stratum jumper clusters were retained in the A.C.E. medium and large cluster reduction to avoid excessively large weights for these clusters after large block cluster subsampling.

Attachment 3 includes summary statistics for the three major Types of Enumeration Area (TEA). Table 5 gives the distribution of E- and P-sample clusters and housing units by TEA, while Figure 10 summarizes the weights. This figure shows that the P and E samples have similar distributions within each of the major TEAs. Table 6 in Attachment 4 shows E- and P-sample cluster and housing unit totals by A.C.E. Regional Office (ACERO).

III. REFERENCES

1. DSSD Census 2000 Procedures and Operations Memorandum Series R-16, "Accuracy and Coverage Evaluation Survey: Initial Listing Sample Results," June 25, 1999.

2. DSSD Census 2000 Procedures and Operations Memorandum Series R-23, "Accuracy and Coverage Evaluation Survey: Approval and Summary of Results of the Reduction Sample," January 21, 2000.

3. DSSD Census 2000 Procedures and Operations Memorandum Series R-25. "Accuracy and Coverage Evaluation: Small Block Cluster Subsampling Approval and Summary of Results," February 10, 2000.

4. DSSD Census 2000 Procedures and Operations Memorandum Series R-32, "Accuracy and Coverage Evaluation Survey: Large Block Cluster Subsampling Approval and Summary of Results," May 30, 2000.

5. DSSD Census 2000 Procedures and Operations Memorandum Series R-31, "Accuracy and Coverage Evaluation Survey: Specification for E-Sample Identification," May 16, 2000.

cc: DSSD Census 2000 Procedures and Operations Memorandum Series Distribution List
Statistical Design Team Leaders
A.C.E. Implementation Team
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Table 1 Summary Statistics of the E-Sample Cumulative Totals

State	0 HCUF HU Clusters	1-79 HCUF HU Clusters	80+ HCUF HU Clusters	Total Clusters	E-sample HUs in 1-79 Clusters	HCUF HUs in 80+ Clusters	E-sample HUs in 80+ Clusters	E-sample HUs	P-sample HUs
Alabama	10	103	48	161	2,776	7,494	1,793	4,569	4,450
Alaska	6	39	25	70	941	3,717	926	1,867	1,739
Arizona	60	201	61	322	4,963	16,795	2,898	7,861	7,667
Arkansas	9	76	23	108	1,838	3,796	1,118	2,956	2,716
California	88	581	432	1,101	18,177	76,742	16,228	34,405	33,527
Colorado	21	95	50	166	2,672	8,329	1,587	4,259	4,153
Connecticut	5	68	38	111	2,074	6,183	1,241	3,315	3,243
Delaware	5	40	21	66	1,270	3,122	659	1,929	1,770
Dist. of Col.	2	27	29	58	1,144	6,712	1,216	2,360	2,190
Florida	29	292	212	533	8,134	51,527	7,037	15,171	15,254
Georgia	16	163	97	276	4,373	19,643	3,346	7,719	7,762
Hawaii	5	44	72	121	1,323	20,527	2,653	3,976	3,603
Idaho	30	58	19	107	1,398	3,125	850	2,248	1,995
Illinois	15	273	115	403	8,190	18,900	4,302	12,492	12,365
Indiana	13	157	41	211	4,082	7,626	1,870	5,952	5,945
Iowa	10	92	20	122	2,237	3,825	907	3,144	2,991
Kansas	15	86	16	117	2,124	3,433	734	2,858	2,666
Kentucky	11	96	51	158	2,360	9,392	1,692	4,052	3,979
Louisiana	40	112	47	199	3,078	7,333	1,809	4,887	4,417
Maine	18	63	13	94	1,596	1,857	429	2,025	1,932
Maryland	3	89	73	165	2,651	16,562	2,786	5,437	5,287
Massachusetts	4	142	64	210	4,249	10,369	2,736	6,985	6,393
Michigan	18	240	85	343	6,828	12,558	3,311	10,139	9,980
Minnesota	23	135	45	203	3,443	7,905	1,720	5,163	5,154
Mississippi	13	88	23	124	2,404	2,754	731	3,135	2,934
Missouri	13	128	47	188	3,231	10,175	2,098	5,329	5,509
Montana	33	87	19	139	1,985	2,886	882	2,867	2,800
Nebraska	19	70	11	100	1,705	1,244	258	1,963	1,961
Nevada	40	32	29	101	1,040	8,335	1,175	2,215	2,114
New Hampshire	5	52	19	76	1,426	2,471	467	1,893	1,765
New Jersey	14	156	88	258	4,952	14,716	3,666	8,618	8,271
New Mexico	72	116	24	212	2,340	3,340	1,086	3,426	3,588
New York	20	311	296	627	9,198	61,401	11,071	20,269	18,691
North Carolina	17	169	90	276	4,611	18,136	3,253	7,864	7,843
North Dakota	21	86	14	121	1,759	1,951	482	2,241	2,184
Ohio	15	248	116	379	7,223	21,671	4,016	11,239	11,342
Oklahoma	69	132	31	232	2,631	5,153	1,038	3,669	3,666
Oregon	54	70	45	169	1,680	8,347	2,467	4,147	3,472
Pennsylvania	16	320	92	428	9,143	14,415	3,449	12,592	12,264
Rhode Island	3	47	19	69	1,194	2,691	556	1,750	1,774
South Carolina	13	92	37	142	2,502	8,875	1,968	4,470	4,499
South Dakota	30	92	14	136	1,711	2,472	495	2,206	2,177
Tennessee	13	144	50	207	4,022	10,353	2,429	6,451	5,819
Texas	124	451	218	793	12,439	48,862	9,213	21,652	20,362
Utah	26	56	25	107	1,557	4,476	818	2,375	2,486
Vermont	3	53	19	75	1,263	3,249	640	1,903	1,916
Virginia	11	141	106	258	3,555	20,486	3,731	7,286	6,887
Washington	30	131	71	232	3,782	12,145	2,609	6,391	6,107
West Virginia	6	51	22	79	1,173	4,224	724	1,897	1,877
Wisconsin	16	161	34	211	4,278	5,318	1,159	5,437	5,509
Wyoming	60	66	13	139	1,421	1,996	554	1,975	1,918
United States	1,212	6,822	3,269	11,303	186,146	629,614	124,883	311,029	300,913
Puerto Rico	28	254	217	499	7,418	44,771	6,695	14,113	13,736
GRAND TOTAL	1,240	7,076	3,486	11,802	193,564	674,385	131,578	325,142	314,649

Table 2 State Weighted and Unweighted P-Sample and E-Sample Housing Units and Average Weights

	Weighted Housing Unit Estimates			Housing Unit Sample Sizes			Average Weight	
	P Sample	E Sample	P over E	P Sample	E Sample	P over E	P Sample	E Sample
Alabama	1,967,703	1,953,559	1.007	4,450	4,569	0 974	442	428
Alaska	186,971	187,657	0.996	1,739	1,867	0 931	108	101
Arizona	2,291,735	2,419,098	0.947	7,667	7,861	0 975	299	308
Arkansas	1,204,014	1,214,878	0.991	2,716	2,956	0 919	443	411
California	12,255,066	12,129,849	1 010	33,527	34,405	0.974	366	353
Colorado	1,633,980	1,579,070	1.035	4,153	4,259	0.975	393	371
Connecticut	1,262,197	1,249,792	1.010	3,243	3,315	0.978	389	377
Delaware	282,962	285,557	0.991	1,770	1,929	0.918	160	148
District of Columbia	295,972	295,099	1.003	2,190	2,360	0.928	135	125
Florida	7,350,667	6,958,799	1.056	15,254	15,171	1.005	482	459
Georgia	3,178,003	3,101,337	1.025	7,762	7,719	1.006	409	402
Hawaii	446,780	467,582	0.956	3,603	3,976	0 906	124	118
Idaho	475,978	494,377	0.963	1,995	2,248	0 887	239	220
Illinois	4,752,616	4,723,175	1.006	12,365	12,492	0.990	384	378
Indiana	2,565,559	2,611,248	0.983	5,945	5,952	0 999	432	439
Iowa	1,286,159	1,303,393	0.987	2,991	3,144	0 951	430	415
Kansas	1,054,277	1,085,066	0.972	2,666	2,858	0 933	395	380
Kentucky	1,738,637	1,688,359	1.030	3,979	4,052	0 982	437	417
Louisiana	1,690,093	1,767,498	0.956	4,417	4,887	0 904	383	362
Maine	606,684	580,671	1.045	1,932	2,025	0.954	314	287
Maryland	2,240,463	2,237,811	1.001	5,287	5,437	0.972	424	412
Massachusetts	2,637,732	2,652,699	0 994	6,393	6,985	0.915	413	380
Michigan	3,945,568	3,948,348	0 999	9,980	10,139	0.984	395	389
Minnesota	1,976,410	1,940,302	1.019	5,154	5,163	0.998	383	376
Mississippi	1,067,393	1,065,495	1.002	2,934	3,135	0.936	364	340
Missouri	2,678,909	2,576,545	1.040	5,509	5,329	1 034	486	483
Montana	463,607	459,884	1.008	2,800	2,867	0 977	166	160
Nebraska	684,874	667,586	1.026	1,961	1,963	0 999	349	340
Nevada	895,050	862,509	1.038	2,114	2,215	0.954	423	389
New Hampshire	558,641	523,562	1.067	1,765	1,893	0 932	317	277
New Jersey	3,377,908	3,338,768	1.012	8,271	8,618	0 960	408	387
New Mexico	708,714	667,620	1.062	3,588	3,426	1.047	198	195
New York	7,573,292	7,706,526	0.983	18,691	20,269	0.922	405	380
North Carolina	3,857,166	3,748,539	1.029	7,843	7,864	0.997	492	477
North Dakota	294,040	288,677	1.019	2,184	2,241	0 975	135	129
Ohio	4,785,461	4,687,680	1.021	11,342	11,239	1.009	422	417
Oklahoma	1,461,163	1,465,046	0.997	3,666	3,669	0.999	399	399
Oregon	1,411,681	1,431,030	0.986	3,472	4,147	0 837	407	345
Pennsylvania	5,130,010	5,179,175	0 991	12,264	12,592	0 974	418	411
Rhode Island	408,426	401,022	1 018	1,774	1,750	1 014	230	229
South Carolina	2,274,389	2,332,485	0.975	4,499	4,470	1 006	506	522
South Dakota	300,952	297,492	1.012	2,177	2,206	0 987	138	135
Tennessee	2,489,607	2,609,919	0.954	5,819	6,451	0 902	428	405
Texas	8,116,215	8,098,923	1.002	20,362	21,652	0 940	399	374
Utah	885,164	823,255	1.075	2,486	2,375	1 047	356	347
Vermont	307,822	296,414	1.038	1,916	1,903	1.007	161	156
Virginia	2,714,879	2,797,836	0 970	6,887	7,286	0.945	394	384
Washington	2,496,269	2,435,145	1.025	6,107	6,391	0.956	409	381
West Virginia	917,901	916,552	1.001	1,877	1,897	0 989	489	483
Wisconsin	2,274,773	2,268,976	1.003	5,509	5,437	1.013	413	417
Wyoming	190,271	194,844	0 977	1,918	1,975	0.971	99	99
United States	115,650,803	115,016,729	1.006	300,913	311,029	0 967	384	370
Puerto Rico	1,439,463	1,409,954	1 021	13,736	14,113	0.973	105	100
GRAND TOTAL	117,090,266	116,426,683	1 006	314,649	325,142	0 968	372	358

Table 3A. Cluster and Housing Unit Totals by A.C.E. and HCUF Cluster Size

Number of A.C.E. Housing Units in Cluster	Number of HCUF Housing Units in Cluster: 0	1 - 79	80 or more
0	1,059 clusters 0 E-sample units 0 P-sample units	129 clusters 813 E-sample units 0 P-sample units	26 clusters 1,645 E-sample units 0 P-sample units
1 - 79	162 clusters 0 E-sample units 1,656 P-sample units	6,772 clusters 182,673 E-sample units 183,936 P-sample units	260 clusters 25,684 E-sample units 14,005 P-sample units
80 or more	19 clusters 0 E-sample units 1,071 P-sample units	175 clusters 10,078 E-sample units 7,989 P-sample units	3,200 clusters 104,249 E-sample units 105,992 P-sample units

Table 3B. Cluster and Housing Unit Total by A.C.E. and HCUF Cluster Size with 0 and 1 - 79 Groups Combined

Number of A.C.E. Housing Units in Cluster	Number of HCUF Housing Units in Cluster: 0 - 79	80 or more
0 - 79	8,122 clusters 183,486 E-sample units 185,592 P-sample units	286 clusters 27,329 E-sample units 14,005 P-sample units
80 or more	194 clusters 10,078 E-sample units 9,060 P-sample units	3,200 clusters 104,249 E-sample units 105,992 P-sample units

Table 4. State Cluster and Housing Unit Counts by A.C.E. and HCUF Cluster Size

State	A C E < 80 and HCUF < 80			A.C.E >= 80 and HCUF < 80			A.C.E. < 80 and HCUF >= 80			A C E >= 80 and HCUF >= 80		
	Clusters	E-Sample HUs	P-Sample HUs	Clusters	E-Sample HUs	P-Sample HUs	Clusters	E-Sample HUs	P-Sample HUs	Clusters	E-Sample HUs	P-Sample HUs
Alabama	111	2,640	2,665	2	136	88	4	348	282	44	1,445	1,415
Alaska	44	941	953	1	0	18	5	392	199	20	534	569
Arizona	258	4,863	5,046	3	100	52	5	465	147	56	2,433	2,422
Arkansas	84	1,764	1,708	1	74	19	2	235	87	21	883	902
California	645	16,979	16,896	24	1,198	1,544	41	3,428	1,712	391	12,800	13,375
Colorado	112	2,480	2,464	4	192	186	3	385	198	47	1,202	1,305
Connecticut	70	1,851	1,945	3	223	115	2	103	26	36	1,138	1,157
Delaware	41	1,062	1,033	4	208	101	1	104	44	20	555	592
Dist. of Col	27	1,033	1,053	2	111	86	2	137	53	27	1,079	998
Florida	314	7,798	7,933	7	336	624	16	1,377	803	196	5,660	5,894
Georgia	174	4,206	4,262	5	167	346	9	721	428	88	2,625	2,726
Hawaii	45	1,102	1,040	4	221	108	2	170	116	70	2,483	2,339
Idaho	87	1,319	1,392	1	79	20	5	374	261	14	476	322
Illinois	284	7,950	8,067	4	240	208	8	635	443	107	3,667	3,647
Indiana	166	3,948	4,037	4	134	291	3	323	135	38	1,547	1,482
Iowa	100	2,163	2,156	2	74	28	1	84	6	19	823	801
Kansas	100	2,091	2,054	1	33	57	2	231	60	14	503	495
Kentucky	106	2,322	2,307	1	38	20	5	460	300	46	1,232	1,352
Louisiana	148	2,860	2,769	4	218	137	5	425	262	42	1,384	1,249
Maine	80	1,523	1,533	1	73	19	1	88	38	12	341	342
Maryland	86	2,406	2,378	6	245	162	5	510	196	68	2,276	2,551
Massachusetts	145	4,187	4,193	1	62	35	6	916	307	58	1,820	1,858
Michigan	256	6,722	6,738	2	106	102	8	727	486	77	2,584	2,654
Minnesota	157	3,380	3,475	1	63	82	4	427	259	41	1,293	1,338
Mississippi	98	2,262	2,178	3	142	68	2	169	154	21	562	534
Missouri	138	3,107	3,198	3	124	157	3	305	191	44	1,793	1,963
Montana	120	1,985	2,002	0	0	0	2	206	144	17	676	654
Nebraska	88	1,661	1,685	1	44	49	1	83	51	10	175	176
Nevada	72	1,040	1,026	0	0	0	3	337	115	26	838	973
New Hampshire	53	1,143	1,156	4	283	140	0	0	0	19	467	469
New Jersey	163	4,550	4,649	7	402	513	12	1,182	720	76	2,484	2,389
New Mexico	185	2,206	2,494	3	134	78	2	179	106	22	907	910
New York	316	8,463	8,277	15	735	438	21	2,025	1,024	275	9,046	8,952
North Carolina	178	4,170	4,316	8	441	585	3	234	89	87	3,019	2,853
North Dakota	106	1,698	1,714	1	61	33	1	135	66	13	347	371
Ohio	258	6,913	7,064	5	310	173	4	344	305	112	3,672	3,800
Oklahoma	200	2,559	2,617	1	72	22	1	81	79	30	957	948
Oregon	122	1,623	1,588	2	57	31	7	896	278	38	1,571	1,575
Pennsylvania	332	8,904	8,951	4	239	124	12	860	512	80	2,589	2,677
Rhode Island	49	1,119	1,200	1	75	40	0	0	0	19	556	534
South Carolina	100	2,200	2,328	5	302	173	3	334	177	34	1,634	1,821
South.Dakota	121	1,632	1,632	1	79	16	1	93	25	13	402	504
Tennessee	150	3,666	3,719	7	356	267	6	666	352	44	1,763	1,481
Texas	563	11,863	11,914	12	576	636	26	3,009	1,117	192	6,204	6,695
Utah	80	1,465	1,640	2	92	39	0	0	0	25	818	807
Vermont	56	1,263	1,267	0	0	0	1	95	78	18	545	571
Virginia	151	3,481	3,502	1	74	10	5	576	263	101	3,155	3,112
Washington	158	3,681	3,761	3	101	148	6	749	303	65	1,860	1,895
West Virginia	56	1,096	1,108	1	77	28	0	0	0	22	724	741
Wisconsin	173	4,008	4,251	4	270	193	1	83	72	33	1,076	993
Wyoming	124	1,281	1,345	2	140	93	2	150	46	11	404	434
United States	7,850	176,629	178,679	184	9,517	8,502	270	25,856	13,115	2,999	99,027	100,617
Puerto Rico	272	6,857	6,913	10	561	558	16	1,473	890	201	5,222	5,375
GRAND TOTAL	8,122	183,486	185,592	194	10,078	9,060	286	27,329	14,005	3,200	104,249	105,992

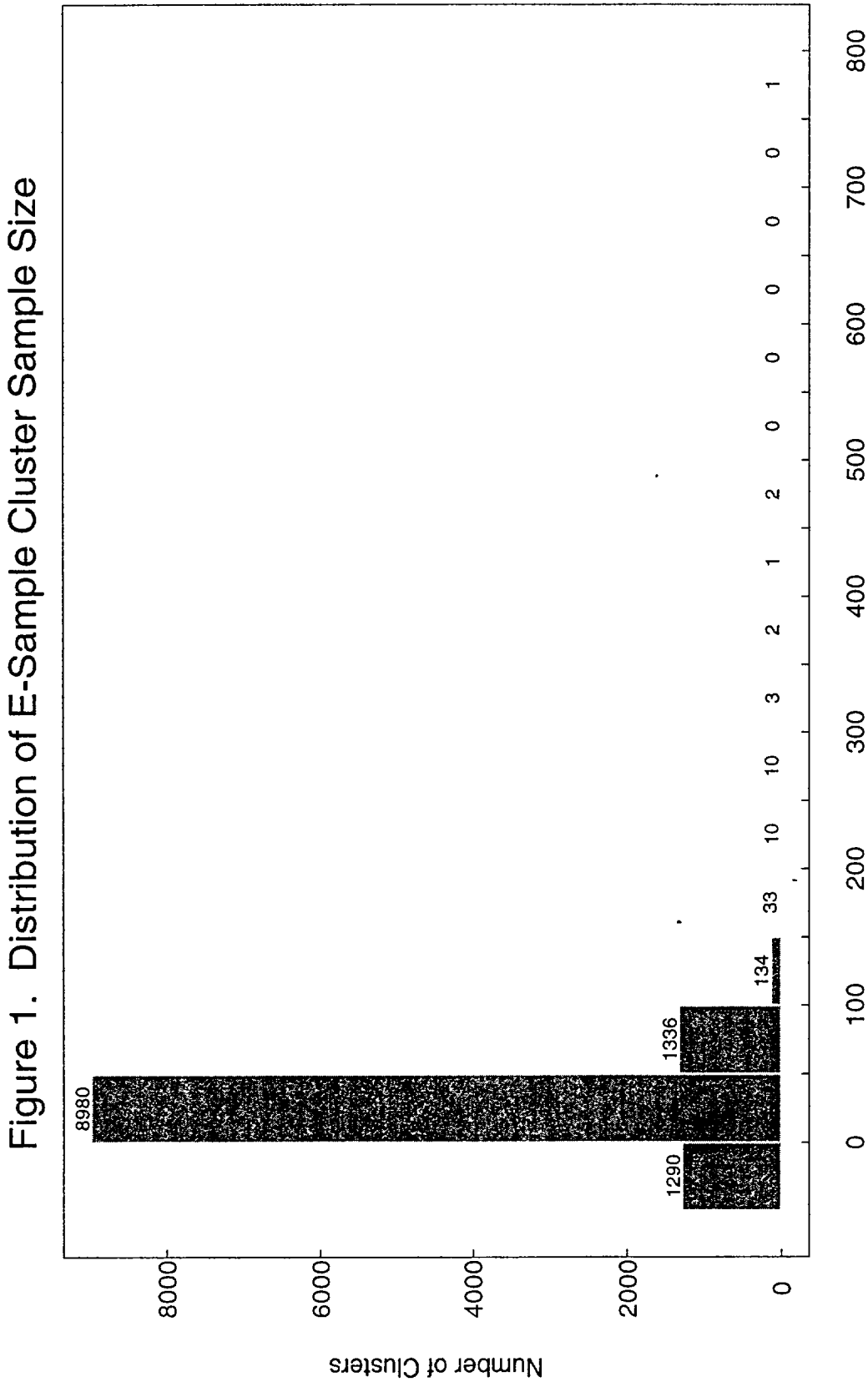


Figure 1. Distribution of E-Sample Cluster Sample Size
Number of Clusters
0
2000
4000
6000
8000
1290
8980
1336
134
33
10
10
3
2
1
2
0
0
0
0
0
1
0
100
200
300
400
500
600
700
800
E-Sample Cluster Sample Size (Housing Units)

Figure 2. Distribution of Cluster Weights

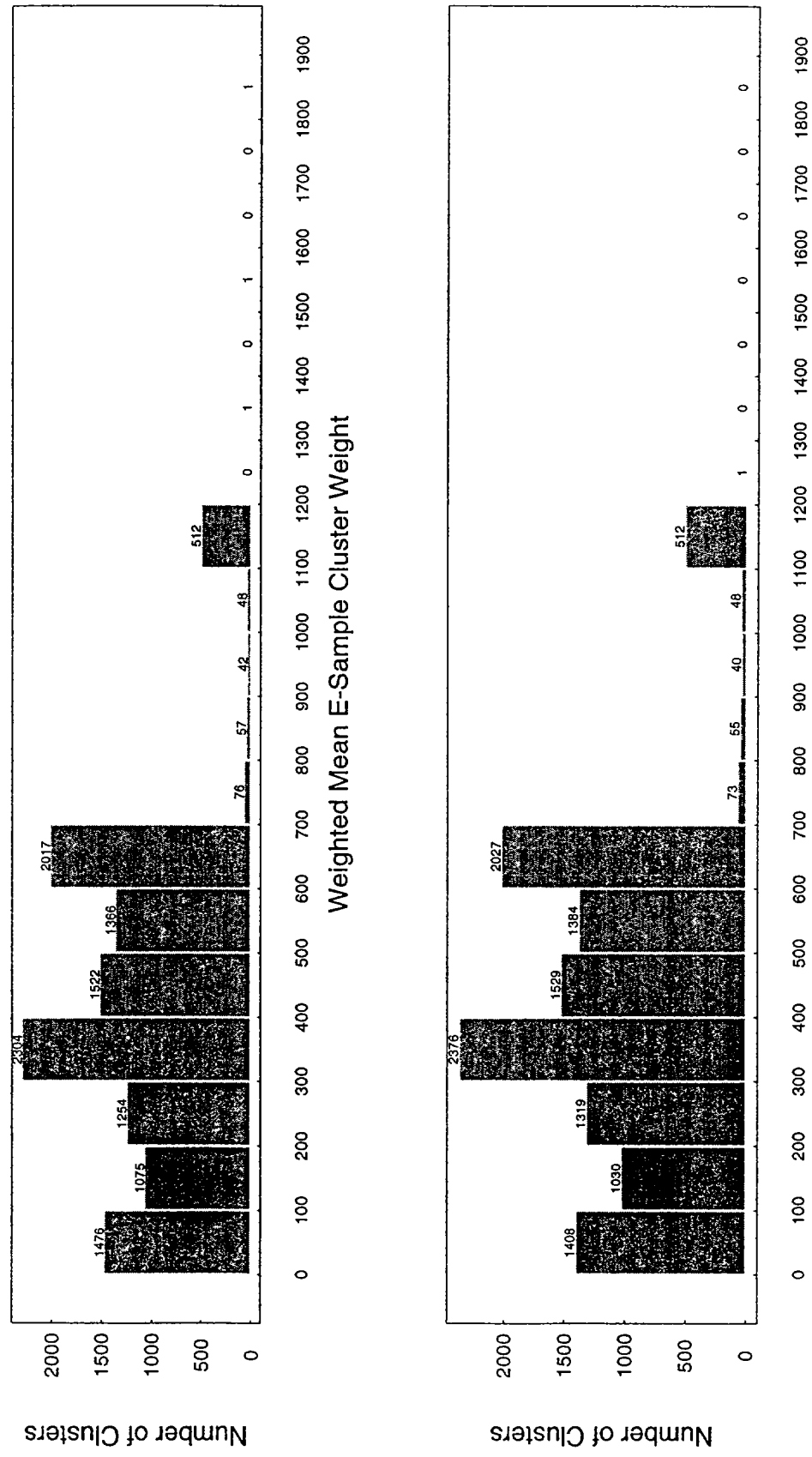


Figure 3. Distribution of Housing Unit Weights

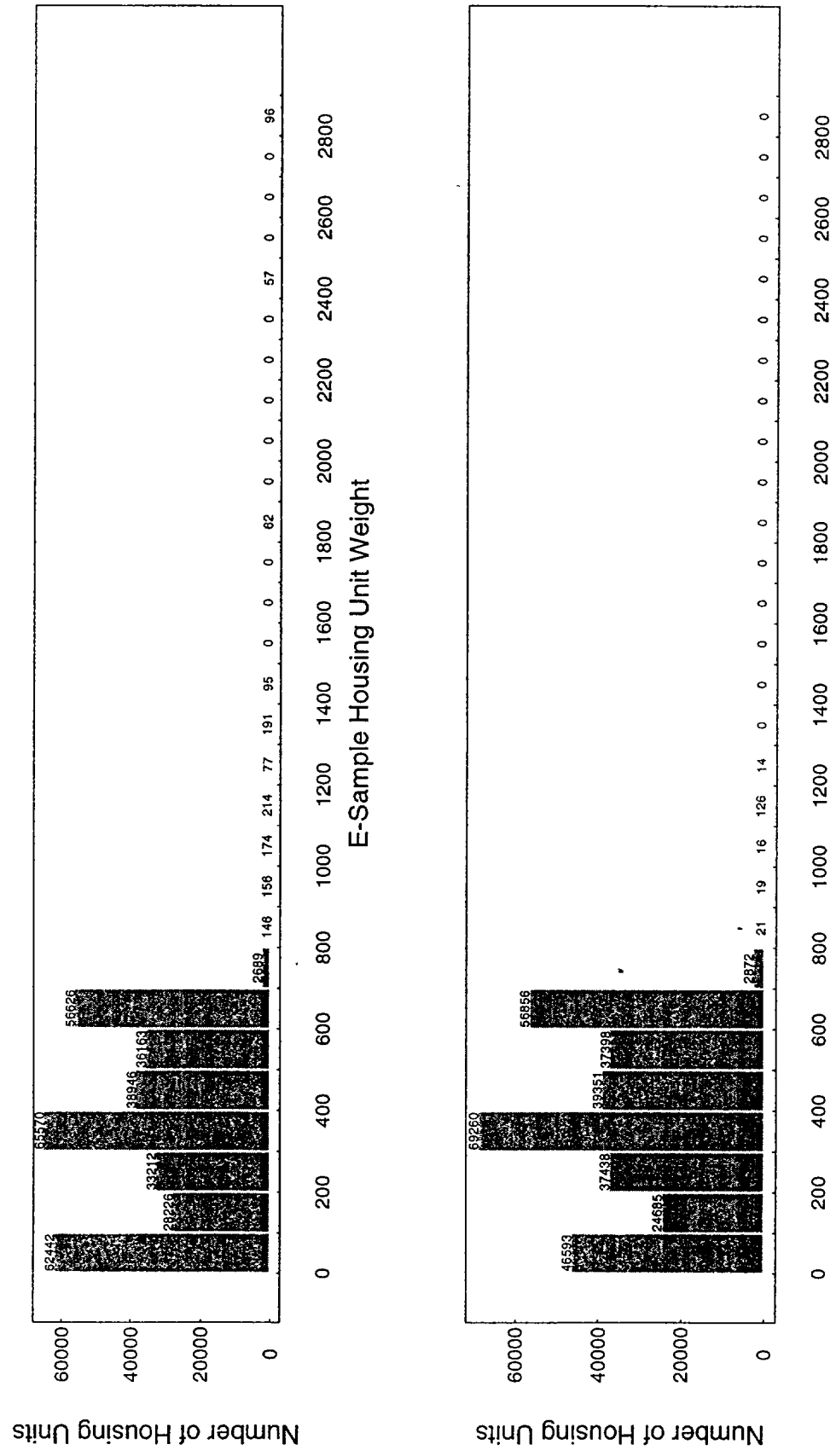


Figure 4. Distribution of E-Sample Weight-1

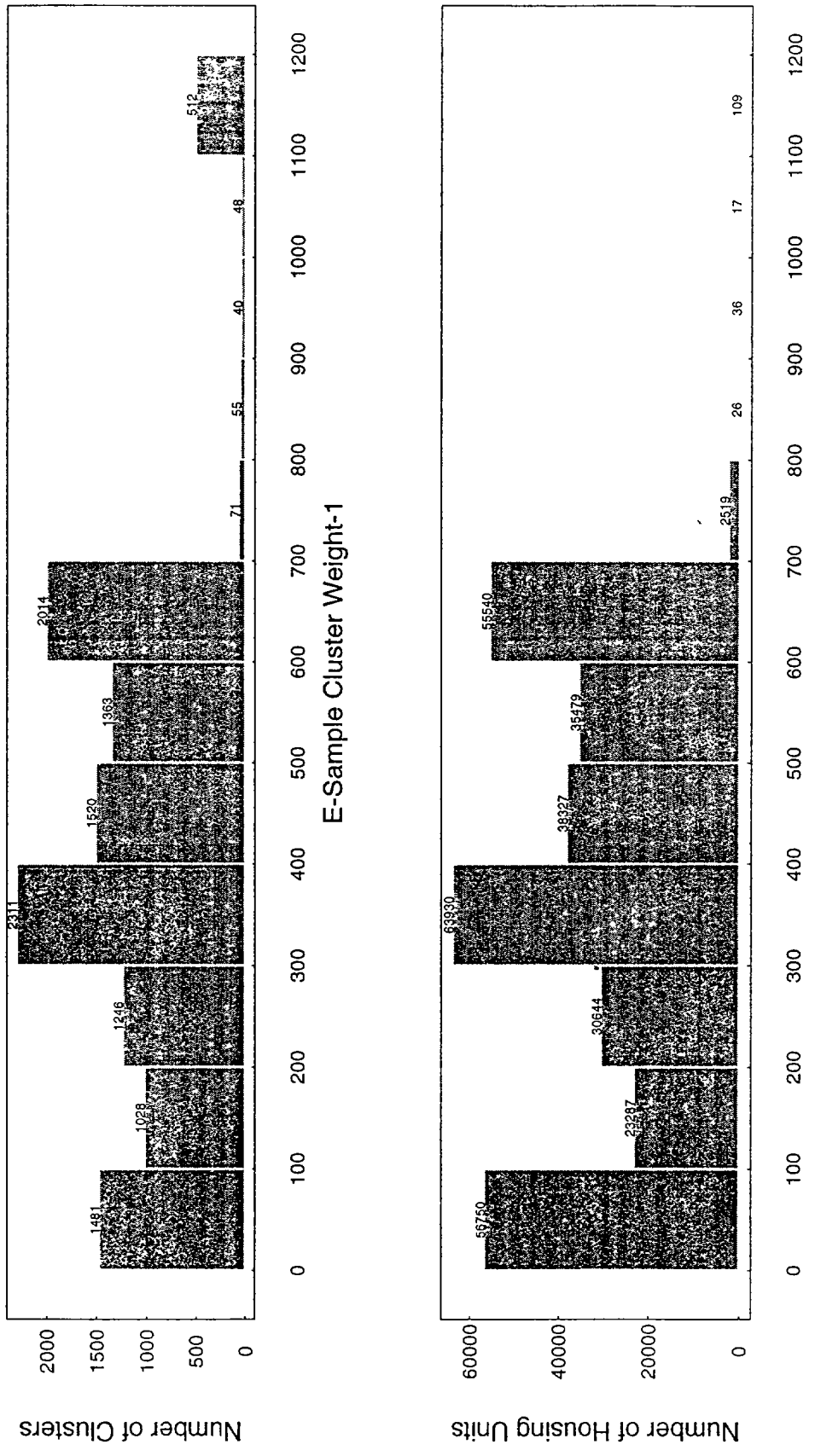


Figure 5. Distribution of E-Sample Weight-2

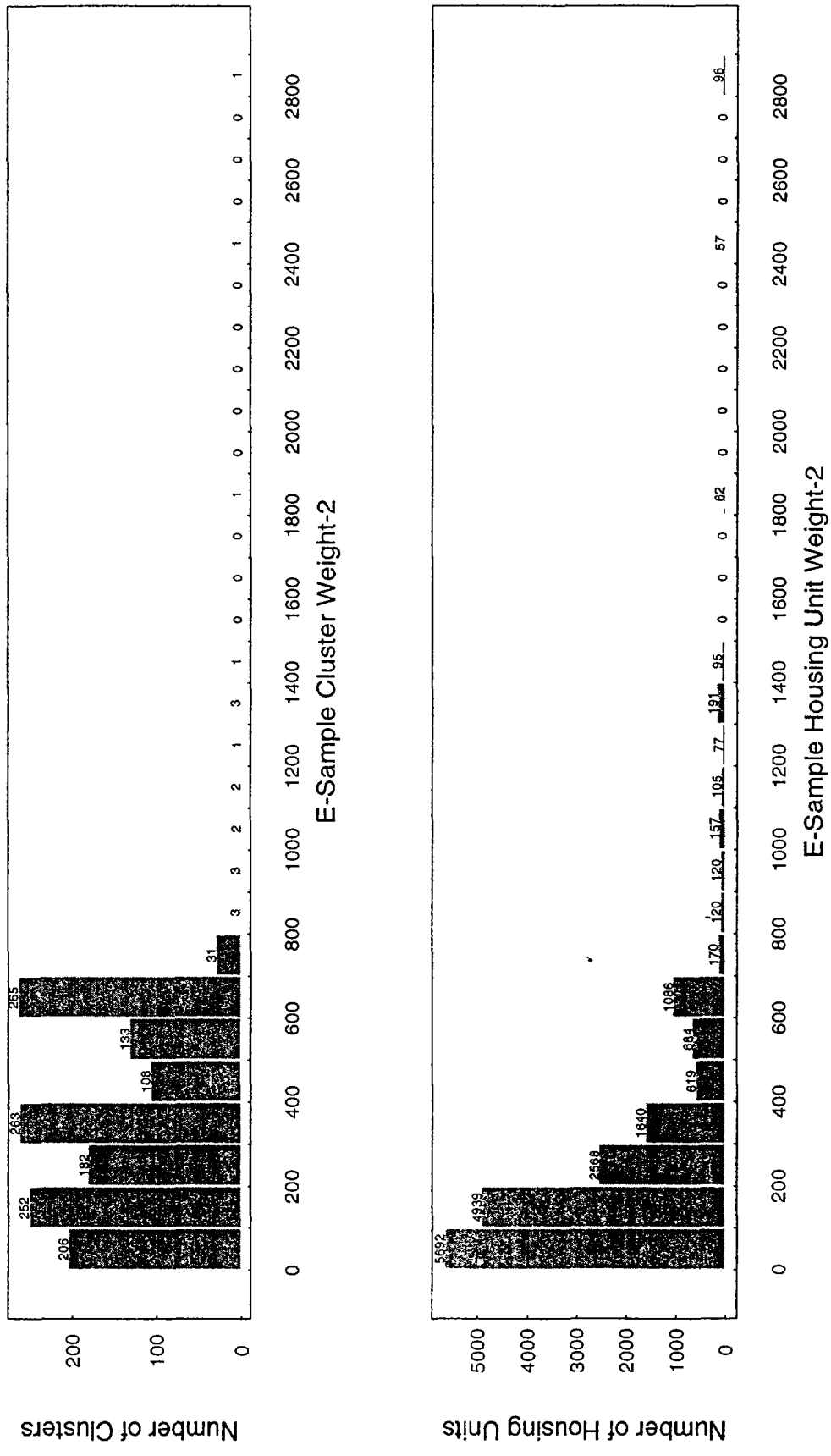
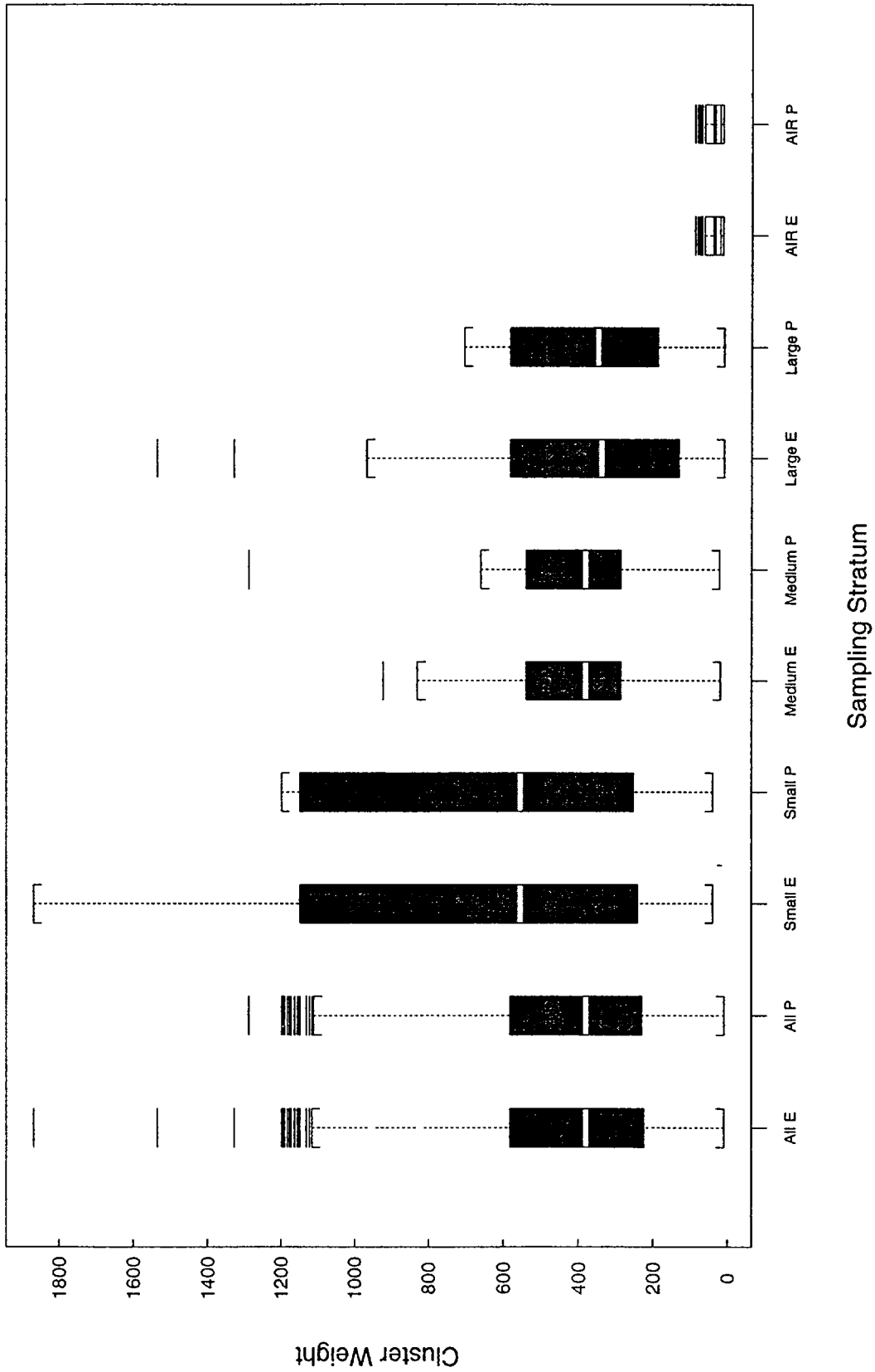


Figure 6. Cluster Weights Overall and by Sampling Stratum



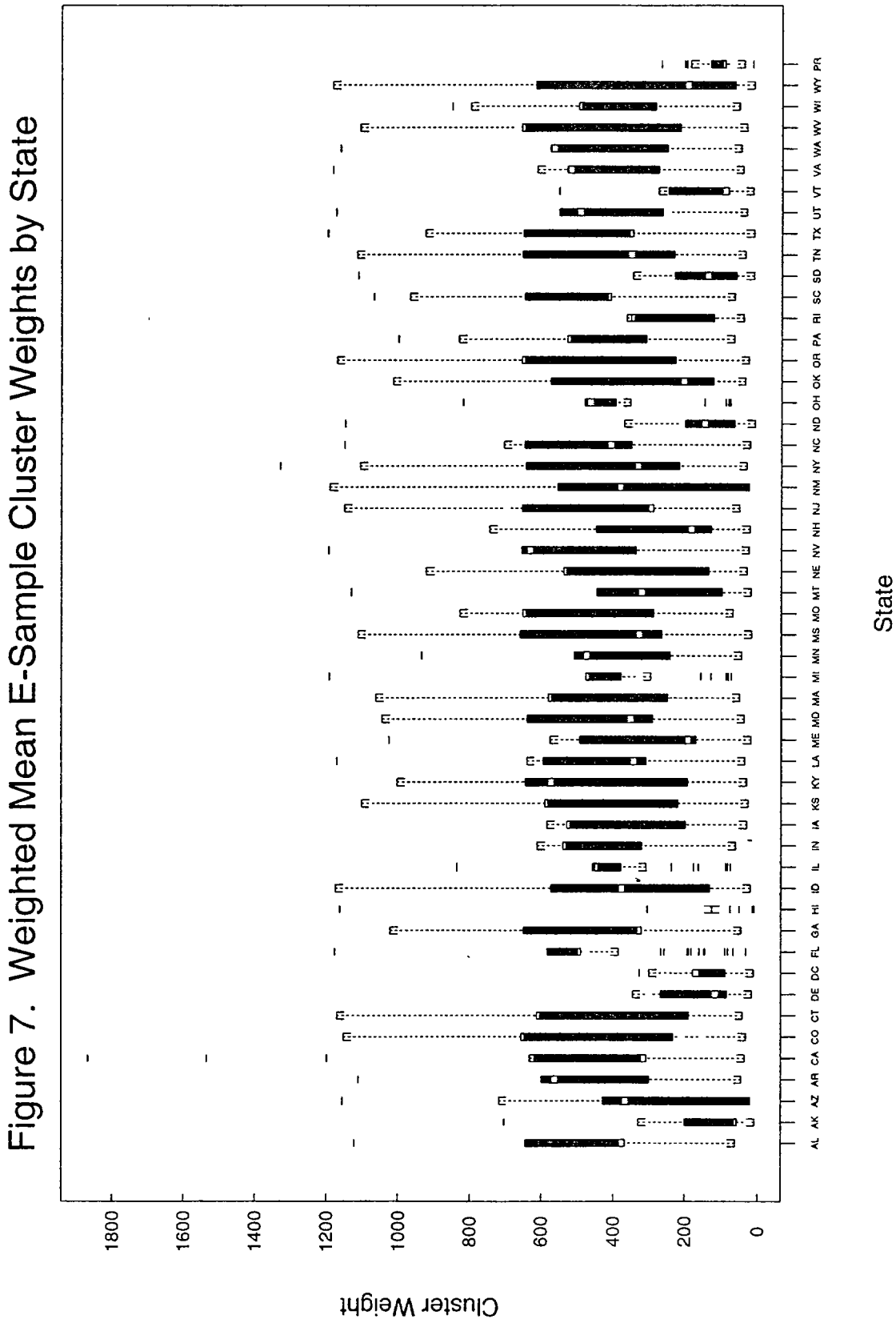


Figure 7. Weighted Mean E-Sample Cluster Weights by State
Cluster Weight
0
200
400
600
800
1000
1200
1400
1600
1800
State
AL AK AZ AR CA CO CT DE DC FL GA HI ID IL IN IA KS KY LA ME MD MA MI MN MS MO MT NE NV NH NJ NM NY NC ND OH OK OR PA RI SC SD TN TX UT VT VA WA WV WI WY PR

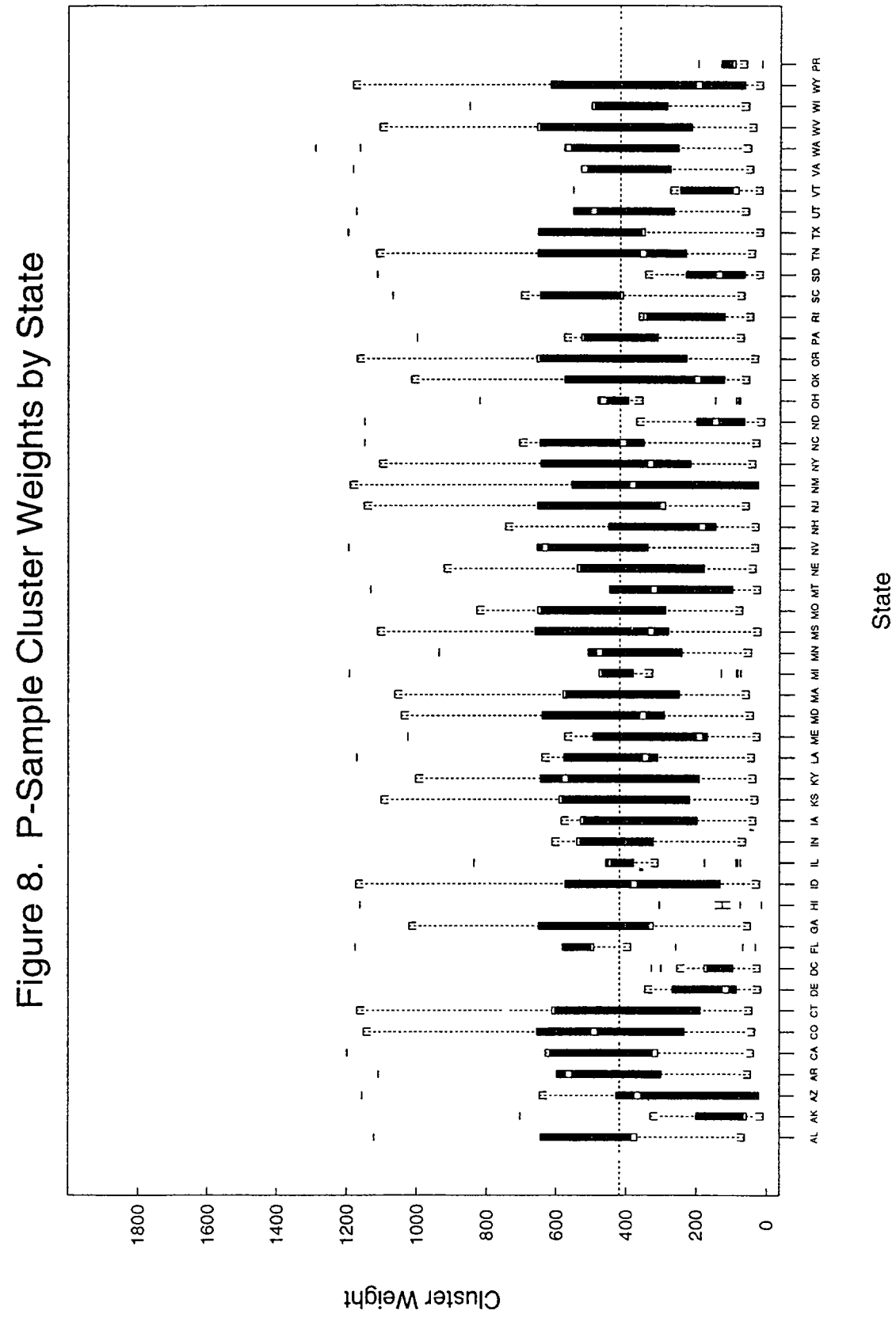


Figure 8. P-Sample Cluster Weights by State
Cluster Weight
0
200
400
600
800
1000
1200
1400
1600
1800
State
AL AK AZ AR CA CO CT DE DC FL GA HI ID IL IN IA KS KY LA ME MD MA MI MN MS MO MT NE NV NH NJ NM NY NC ND OH OK OR PA RI SC SD TN TX UT VT VA WA WV WI WY PR

Figure 9. Weights by A.C.E. Reduction Stratum for Medium and Large Clusters

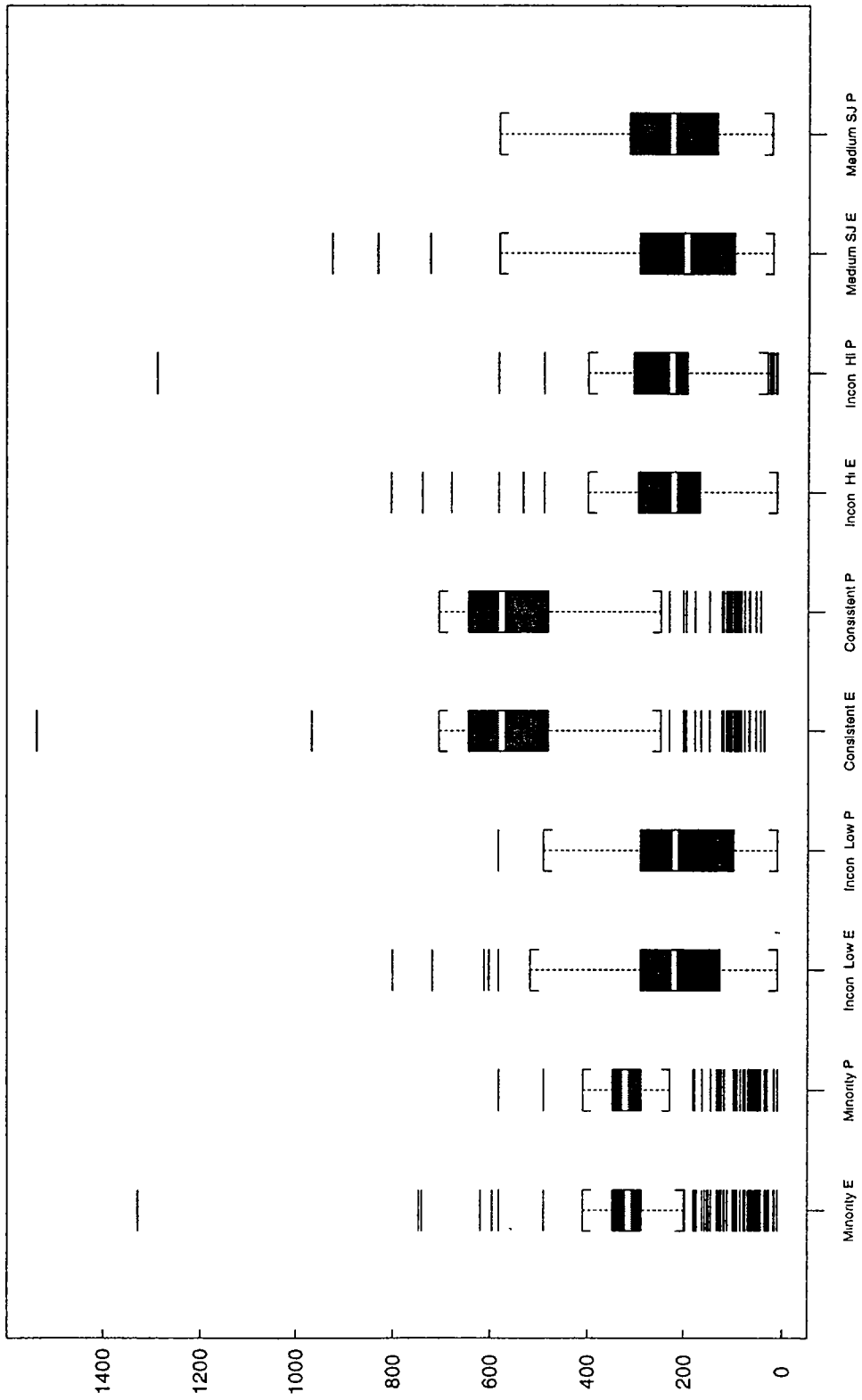


Table 5. Distribution of E- and P-Sample Clusters and HUs by Major Type of Enumeration Area Group

Major Type of Enumeration Area	Clusters	P-Sample HUs	E-Sample HUs
Block Canvassing	7,799	236,098	245,558
Address Listing	3,084	61,734	62,276
List/Enumerate	420	3,081	3,195
Total for US	11,303	300,913	311,029
Puerto Rico	499	13,736	14,113
Grand Total	11,802	314,649	325,142

Notes:

Block Canvassing includes Type of Enumeration Area Codes 1, 6, 7, and 8.

Address Listing includes Type of Enumeration Area Codes 2, 5, and 9.

List/Enumerate includes Type of Enumeration Area Code 3.

Puerto Rico is entirely in the Address Listing Major Type of Enumeration Area but is not included in the above Address Listing numbers.

Figure 10. Cluster Weights by Major Type of Enumeration Area

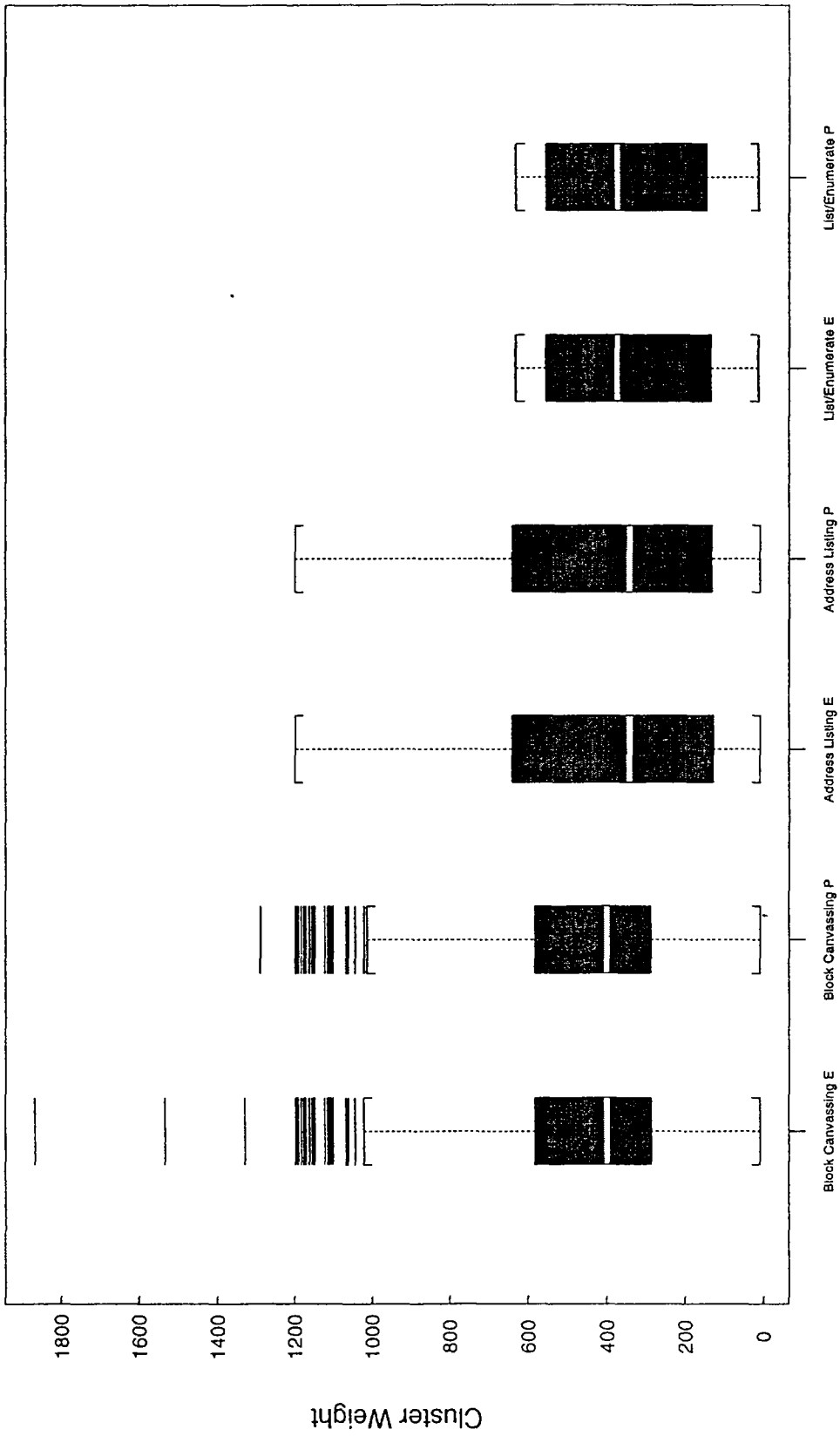


Table 6. Distribution of Clusters and E and P-sample HUs by A.C.E. Regional Office

ACERO	ACERO Name	Clusters	P-Sample HUs	E-sample HUs
21	Boston	1,411	37,240	39,233
22	New York	498	17,434	18,481
23	Philadelphia	827	24,558	25,475
24	Detroit	801	23,199	23,275
25	Chicago	825	23,819	23,881
26	Kansas City	970	22,702	23,119
27	Seattle	946	24,050	25,911
28	Charlotte	1,041	29,027	30,123
29	Atlanta	970	27,466	27,459
30	Dallas	1,116	27,713	29,674
31	Denver	1,543	31,048	31,388
32	Los Angeles	854	26,393	27,123
	Total	11,802	314,649	325,142

Note: Puerto Rico is included in the Boston ACERO.